

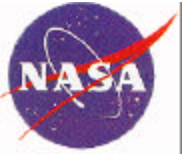
AIRS Level 2 Software Status

Sung-Yung Lee

AIRS Science Team Meeting
September, 2002
Camp Springs, Maryland

September, 2002

AIRS Level 2



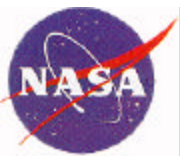
Current Status of Level 2 PGE



- Version 2.6.7 is the current version
- Changes since May 2002
 - Precipitation algorithm update
 - MW Tuning Tested
 - Ocean cases only
 - Tuning against NCEP forecast
 - Biases against ECMWF forecast from GSFC
 - 90+ % yield
 - Coastline, Precipitating area has lower yield
 - Final algorithm runs with real data
 - Non-optimal channel set, RTA, etc
- Channel property file version v6.3.0 is current, but not final
 - 270 channels with nonzero BadFlag
 - Dead detectors
 - Noisy channels, NeDT > 2.0
 - Bad spectral properties
 - Coordinate channel selection

September, 2002

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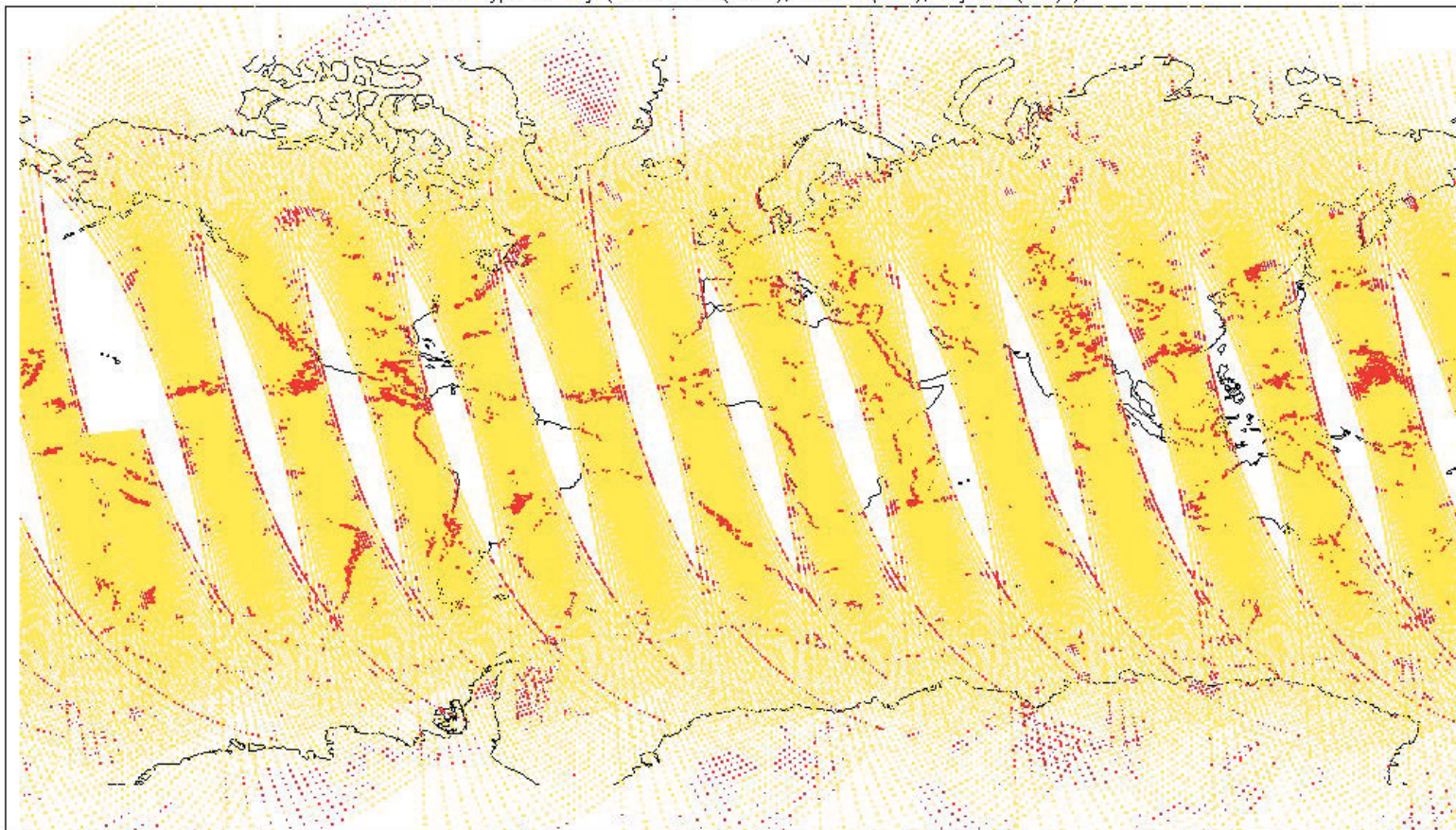
Map of Retrieval Flags

July 4, 2002, no tuning



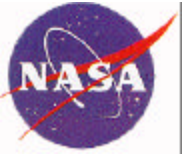
JPL

Retrieval Type for Day { Full MW+IR(Black), MW+SIR(Blue), Rejected(Red) }



September, 2002

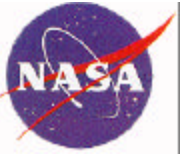
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Prototype



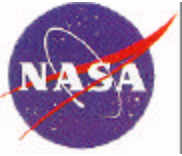
- New CM Environment for level 2 developers
 - In addition to AR/CR/NR
 - Package name is of the form PT-xxxx-l2-?????-????
- Expedite Level 2 Development Cycle
 - Quick approval by Oliphant/Lee/Manning
 - Develop and Test
 - CCB approves after testing is complete
- Level 2 developers should point to /ref/dev/ instead of /ref/devstable/
 - Copies move to /ref/devstable/ only after CCB approval



Artifacts in AIRS radiances seen with real Data



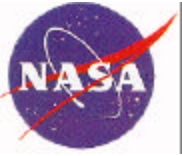
- Data Gaps
- Saturated channels - few footprints a day
 - Mostly shortwave window channels, some longwave IR channels
 - Sun glinting, forest fire (Two cases so far, Siberia, Brazil)
 - Ignore the footprints
 - we can have up to 3 bad AIRS footprints within an AMSU footprint
- Negative Radiance - Many and Often.
 - Shortwave window channels during night at very low temperatures
 - Over Antarctica and high thick cloud
 - All algorithms are ready to handle negative radiances
- Spikes, Popping, or sudden increase of noise
 - Pop detection algorithm is still under study
 - Channels that pop “often” will be added to the bad channel list
 - Some channels pop once in a long time
 - with 3,000,000 spectra per day 5 sigma events will occur
 - Final algorithm can disregard the channel only when they pop
 - Regression algorithms can use the channel even when they pop
 - Stay tuned



Focus days



- New version of PGS software will run on focus days
 - Measure progress of PGS software development
 - New Focus day when spectral property changes
 - The granules cover roughly the same area.
- Focus1: July 4, 2002
 - MW focus day
 - MW tuning is based on this focus day
 - MW only retrieval was run
- Focus2: July 20, 2002
 - Part of the period when AIRS was stable, July 19 - 28
- Focus3: September 6, 2002
 - AIRS in operate mode since August 30, 2002

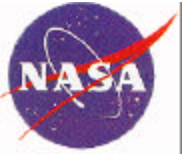


Schedule

30th August	AIRS put into “operate” mode
30th September	RTA Coefficient to JPL, version 7 MW Tuning update
15th October	Simulation for Focus day 3 (Sept 6) AIRS level 1b software V2.7 at JPL
30th November	Preliminary level 2 at JPL Angle Correction Coefficients IR/MW Tuning Coefficients (GCM based) Regression coefficients (GCM based) Channel Selection for final algorithm
4th December	RTA Coefficient to JPL, version 8
11th February	Initial Build of v3.0 to JPL Delivery of all inputs from everybody
9th April	Delivery of v3 to DAAC
8th May	Start running level 2 PGE at GSFC-DAAC

September, 2002

AIRS Level 2



Deliverables



- September 30
 - RTA Coefficient version 7 from Strow
 - MW Tuning update from McMillin
- October 15
 - Clear Simulation for IR/MW tuning from Fishbein
- November 30
 - IR/MW tuning from McMillin
 - Angle Correction Coefficients from McMillin
 - Regression coefficient from Goldberg
 - Channel Selection from Susskind (Final and BUFR)
- December 4
 - RTA Coefficient version 8 from Strow
- February 11
 - Final input for V3 from everybody